

## XP-002261662

1 - (C) FILE CA  
 STN CA Caesar accession number : 1203  
 AN - 125:17011 CA  
 TI - Preparation of spherical silica by a  
       flame method  
 IN - Miyake, Shinichi; Suzuki, Takashi; Suwa, Toshio  
 CS - Dep. Appl. Chem. Biotechnol., Fac. Eng., Yamanashi Univ., Kofu, 440, Jap  
 SO - Mukai Materiaru (1996), 3(262), 219-224  
       CODEN: MUMAFX; ISSN: 1340-7899  
 PB - Sekko Sekkai Gakkai  
 DT - Journal  
 LA - Japanese  
 CC - 57-2 (Ceramics)  
 AB - Fusion of ground natural quartz powder was carried out in propane-oxygen  
       flames. The flow rates of propane and oxygen gases and powder feed rate  
       were varied from 5 to 12.5 and from 25 to 62.5 Nm<sup>3</sup>/h and from 3 to 50  
       kg/h, resp., but the flow rate of oxygen carrier gas at 7.5 Nm<sup>3</sup>/h was ke  
       const. Two types of burners were used, where a powder-feeding nozzle wa  
       placed axially at the center of burner and six nozzles were around the  
       center of another type of burner. The vitrification ratio of about 80%  
       was obsd. when the powder was treated at the condition of the gas flow  
       rates of 5 for propane gas and 25 Nm<sup>3</sup>/h for oxygen gas, and the feed rat  
       of powder at 20 kg/h. Small particles showed higher vitrification ratic  
       and sphericity than large one. It was also found that high vitrificatio  
       ratio was obtained using the burner with six nozzles. Small particles  
       some hundreds of nanometers in size which are generated in the flame  
       contributing to an increase of specific area of products.  
 ST - silica spherical particle propane oxygen flame  
 IT - Particle size  
       Surface area  
       (prepn. of spherical silica by fusion of ground natural quartz powder  
       in propane-oxygen flames)  
 IT - Flame  
       (propane-oxygen; prepn. of spherical silica by fusion of ground natura  
       quartz powder in propane-oxygen flames)  
 IT - 74-98-6, Propane, processes  
       RL: PEP (Physical, engineering or chemical process); PROC (Process)  
       (flame; prepn. of spherical silica by fusion of ground natural quartz  
       powder in propane-oxygen flames)  
 IT - 7631-86-9, Silica, processes  
       RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
       PROC (Process)  
       (spherical powders; prepn. of spherical silica by fusion of ground  
       natural quartz powder in propane-oxygen flames)